



# Volunteer Lake Assessment Program Individual Lake Reports

## E. WASHINGTON DAM POND, WASHINGTON, NH

### MORPHOMETRIC DATA

Watershed Area (Ac.):		Max. Depth (m):		Flushing Rate (yr <sup>-1</sup> )		Year	Trophic class	KNOWN EXOTIC SPECIES
Surface Area (Ac.):	26	Mean Depth (m):		P Retention Coef:		2010	MESOTROPHIC	
Shore Length (m):		Volume (m <sup>3</sup> ):		Elevation (ft):				

The Waterbody Report Card tables are generated from the DRAFT 2014 305(b) report on the status of N.H. waters, and are based on data collected from 2004-2013. Detailed waterbody assessment and report card information can be found at [www.des.nh.gov/organizations/divisions/water/wmb/swqa/index.htm](http://www.des.nh.gov/organizations/divisions/water/wmb/swqa/index.htm)

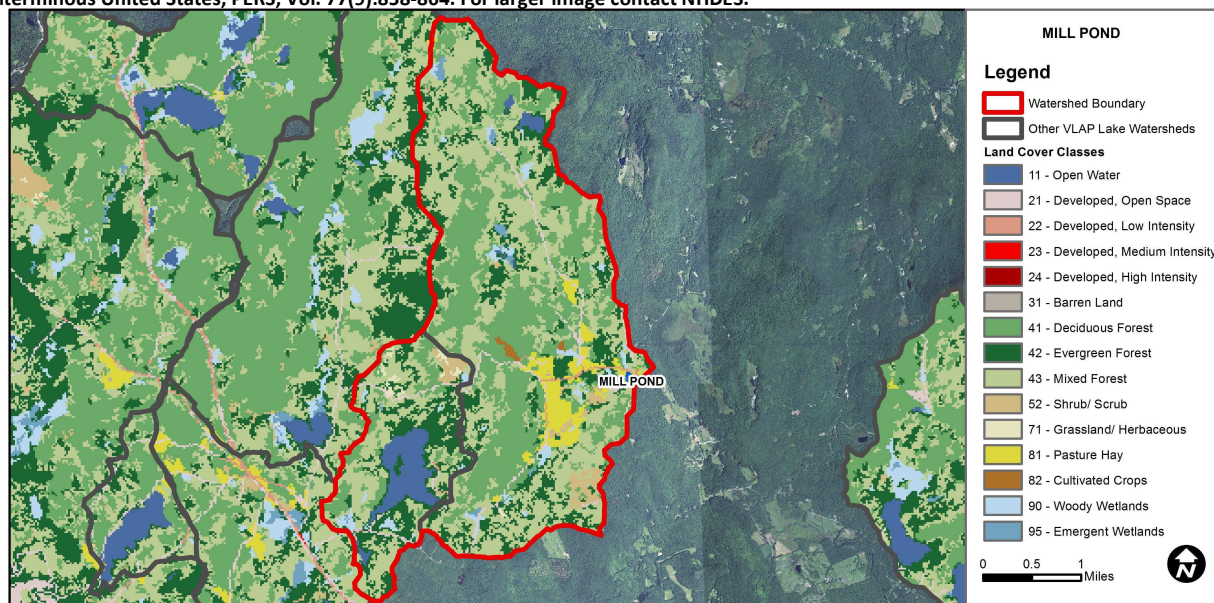
Designated Use	Parameter	Category	Comments
Aquatic Life	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Oxygen, Dissolved	Encouraging	There are < 10 samples with 0 exceedances of criteria. More data needed.
	Dissolved oxygen satura	Encouraging	There are < 10 samples with 0 exceedances of criteria. More data needed.
Primary Contact Recreation	Escherichia coli	No Data	No data for this parameter.
	Chlorophyll-a	Slightly Bad	There are >10% of samples (minimum of 2), exceeding indicator.

### BEACH PRIMARY CONTACT ASSESSMENT STATUS

BEARDS BROOK - MILL POND TOWN BEACH	Escherichia coli	Bad	There are >=1 exceedance(s) of the geometric mean and/or >=2 single sample criterion exceedances. One or more exceedance is >2X criteria.
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### WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	3.48	Barren Land	0.01	Grassland/Herbaceous	0.47
Developed-Open Space	1.99	Deciduous Forest	28.39	Pasture Hay	3.49
Developed-Low Intensity	0.37	Evergreen Forest	18.32	Cultivated Crops	0.25
Developed-Medium Intensity	0	Mixed Forest	38.9	Woody Wetlands	1.89
Developed-High Intensity	0	Shrub-Scrub	1.89	Emergent Wetlands	0.53



# VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

## MILL POND, EAST WASHINGTON

### 2014 DATA SUMMARY

#### OBSERVATIONS AND RECOMMENDATIONS (Refer to Table 1 and Historical Deep Spot Data Graphics)

- ◆ **CHLOROPHYLL-A:** Chlorophyll levels were very low in July and August and increased to average levels in September. The 2014 average chlorophyll levels were much less than the state median and were the lowest measured since monitoring began. Visual inspection of historical data indicate variable chlorophyll levels since monitoring began.
- ◆ **CONDUCTIVITY/CHLORIDE:** Epilimnetic (deep spot) conductivity levels average in July and August and then increased in September when pond levels were low. Average Epilimnetic conductivity was approximately equal to the state median and stable from 2013. Woodward Brook conductivity levels were low. Island Pond Inlet and Outlet conductivity levels were average and stable from July to August and increased in September during low flows.
- ◆ **E. COLI:** Island Pond Inlet and Woodward Brook E. coli levels decreased from July to September and were well below the state standard for surface waters (406 cts/100 mL).
- ◆ **TOTAL PHOSPHORUS:** Epilimnetic phosphorus levels were slightly elevated in July following a significant storm event that blew out boards in the dam which lowered pond water level. Sampling was conducted after the pond refilled. A similar event occurred in August. Average epilimnetic phosphorus levels remained at the lower 2013 level and we hope to see this continue.
- ◆ **TRANSPARENCY:** Transparency was very good and the Secchi disk was generally visible on the pond bottom on each sampling event.
- ◆ **TURBIDITY:** Epilimnetic turbidity was slightly higher in July and September. The significant storm event in July may have contributed to the higher turbidity and the higher algal growth in September likely contributed to the higher turbidity. Average Epilimnetic turbidity was stable with 2013 levels. Tributary turbidity levels were within average ranges for those stations.
- ◆ **pH:** Epilimnetic pH levels improved as the summer progressed and fluctuated below the desirable range 6.5-8.0 units. Tributary pH levels fluctuated within the desirable range.
- ◆ **RECOMMENDED ACTIONS:** The increased frequency and intensity of significant storm events led to the washout of the dam in July and August in 2014. This is a concern and we hope that this does not occur on a regular basis in the future. The high flushing rate of the pond along with the installation of several best management practices to reduce phosphorus loading to the pond may be helping to lower nutrient and chlorophyll-a levels. We hope to see this continue! Keep up the great work!

Station Name	Table 1. 2014 Average Water Quality Data for BEARDS BROOK - EAST WASHINGTON DAM							
	Alk. mg/l	Chlor-a ug/l	Cond. uS/cm	E. Coli #/100ml	Total P ug/l	Trans. m		Turb. ntu
						NVS	VS	
Epilimnion	7.5	1.98	49.8		16	1.77	1.78	1.36
Island Pond Inlet			61.6	53	11			0.88
Outlet			49.3		14			1.30
Woodward Brook			26.0	40	10			1.19

**NH Median Values:** Median values for specific parameters generated from historic lake monitoring data.

**Alkalinity:** 4.9 mg/L

**Chlorophyll-a:** 4.58 mg/m<sup>3</sup>

**Conductivity:** 40.0 uS/cm

**Chloride:** 4 mg/L

**Total Phosphorus:** 12 ug/L

**Transparency:** 3.2 m

**pH:** 6.6

**NH Water Quality Standards:** Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.

**Chloride:** > 230 mg/L (chronic)

**E. coli:** > 88 cts/100 mL – public beach

**E. coli:** > 406 cts/100 mL – surface waters

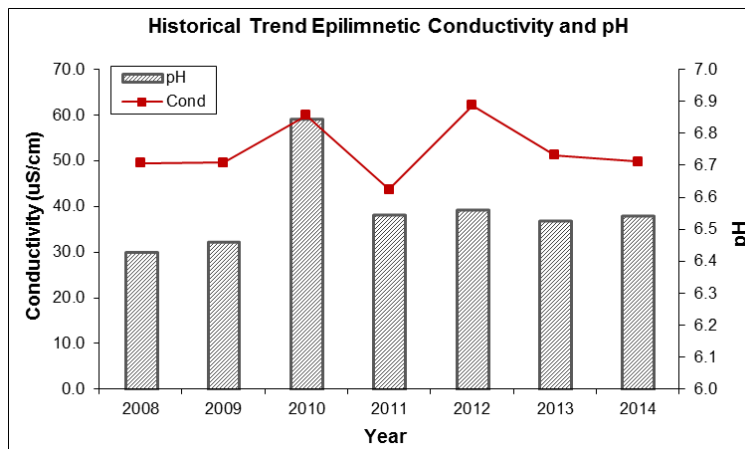
**Turbidity:** > 10 NTU above natural level

**pH:** between 6.5-8.0 (unless naturally occurring)

#### HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation	Parameter	Trend	Explanation
Conductivity	N/A	Ten consecutive years of data necessary for analysis.	Chlorophyll-a	N/A	Ten consecutive years of data necessary for analysis.
pH (epilimnion)	N/A	Ten consecutive years of data necessary for analysis.	Transparency	N/A	Ten consecutive years of data necessary for analysis.
			Phosphorus (epilimnion)	N/A	Ten consecutive years of data necessary for analysis.

**Historical Trend Epilimnetic Conductivity and pH**



**Historical Deep Spot Chlorophyll-a, Epilimnetic Total Phosphorus & Transparency Data**

